

California Department of Fish and Game
Preferred Alternative and Other Alternatives for Marine Protected Areas
in the Central Coast Study Region

Summary of Area and Habitats
June 22, 2006

Overall Summary for Package P (6/22/06 version)

Type of MPA ¹	# Proposed	Area (mi ²)	% of Study Region
State Marine Conservation Area (SMCA)	12	114.91mi ²	9.99 %
State Marine Park (SMP)	1	0.09 mi ²	0.01 %
State Marine Reserve (SMR)²	13	93.33 mi ²	8.12 %
All MPAs combined	26	208.33 mi ²	18.12 %

¹ Note: These are proposed MPA designations, NOT levels of protection assigned by the MLPA Master Plan Science Advisory Team.

² The southern portion of the proposed Morro Bay State Marine Recreational Management Area was included with the SMRs for the analysis.

Individual MPAs in Package P (6/22/06 version)

MPA Name ^A	Size (mi ²)	Along-shore Span (mi) ^B	Depth Range (ft)
Año Nuevo SMR	8.77 mi ²	8.4 mi	0-160 ft
Greyhound Rock SMCA (*)	11.23 mi ²	3.1 mi	0-209 ft
Soquel Canyon SMCA (**)	23.39 mi ²	7.2 mi	247-2113 ft
Portuguese Ledge SMCA (***)	19.82 mi ²	5.4 mi	302-4838 ft
Elkhorn Slough SMR	1.48 mi ²	4.4 mi	0-10 ft
Elkhorn Slough SMP (^)	0.09 mi ²	1.4 mi	0-10 ft
Moro Cojo SMR	0.46 mi ²	5.0 mi	0-10 ft
Ed Ricketts SMCA (*)	0.22 mi ²	1.0 mi	0-74 ft
Hopkins SMR	0.30 mi ²	1.0 mi	0-88 ft
Pacific Grove SMCA (*)	2.44 mi ²	3.8 mi	0-172 ft
Carmel Pinnacles SMR	0.53 mi ²	1.0 mi	69-223 ft
Carmel Bay SMCA (*)	2.12 mi ²	3.1 mi	0-471 ft
Point Lobos SMR	5.36 mi ²	4.7 mi	0-408 ft
Point Lobos SMCA (**)	8.85 mi ²	3.2 mi	268-1858 ft
Point Sur SMR	9.92 mi ²	4.5 mi	0-181 ft
Point Sur SMCA (***)	14.14 mi ²	6.4 mi	165-700 ft
Big Creek SMCA (**)	10.11 mi ²	2.5 mi	0-1964 ft
Big Creek SMR	12.35 mi ²	3.3 mi	0-2393 ft
Piedras Blancas SMR	10.40 mi ²	6.4 mi	0-157 ft
Piedras Blancas SMCA (***)	8.76 mi ²	4.9 mi	94-337 ft
Cambria SMR	3.23 mi ²	3.1 mi	0-137 ft
Morro Bay SMRMA (*northern portion, *** southern portion)	3.01 mi ²	9.4 mi	0-22 ft
Morro Bay East SMR	0.30 mi ²	1.4 mi	0-10 ft
Point Buchon SMR	6.66 mi ²	2.9 mi	0-208 ft
Point Buchon SMCA (***)	11.55 mi ²	5.9 mi	191-377 ft
Vandenberg SMR	32.84 mi ²	14.3 mi	0-127 ft

A. Listed north to south. Symbols following proposed MPA name indicate level of protection as determined by the MLPA Master Plan Science Advisory Team (SAT). (***) indicates SMCA High, (**) indicates SMCA Moderate, (*) indicates SMCA Low, and (^) indicates SMP Low. Level of protection was used in the SAT evaluation.

B. Alongshore span measured as direct line from one end of the MPA to the other.

Habitat Representation in Package P (6/22/06 version)

Habitat	Percentage of Mapped Habitat in Proposed MPA Designations in the Study Region ¹			
	SMR	SMP	SMCA	Total MPAs
Intertidal				
Sandy or gravel beaches	17.88%	0.08%	5.34%	23.30%
Rocky intertidal and cliff	22.57%	0.00%	6.42%	28.99%
Coastal marsh	37.69%	2.60%	9.88%	50.18%
Tidal flats	44.81%	4.22%	19.59%	68.62%
Seagrass beds (0-30m): Surfgrass	23.79%	0.00%	8.97%	32.76%
Seagrass beds (0-30m): Eelgrass	28.89%	0.93%	70.82%	100.65%
Estuary	30.32%	0.92%	23.19%	54.43%
Soft bottom				
0-30 meters	13.99%	0.03%	5.71%	15.48%
30-100 meters	5.21%	0.00%	14.79%	14.84%
100-200 meters	1.56%	0.00%	57.12%	25.43%
>200 meters	6.68%	0.00%	32.00%	22.22%
Hard bottom				
0-30 meters	18.97%	0.00%	6.36%	24.28%
30-100 meters	13.13%	0.00%	14.79%	27.92%
100-200m	0.07%	0.00%	57.12%	57.19%
>200 meters	0.19%	0.00%	32.00%	32.19%
Kelp forest				
Average kelp ('89, '99, '02, '03)	19.97%	0.00%	7.20%	26.99%
Persistent kelp	17.62%	0.00%	9.12%	26.74%
Submarine canyon				
0-30 meters	12.39%	0.00%	24.78%	37.17%
30-100 meters	5.88%	0.00%	5.43%	11.31%
100-200 meters	4.79%	0.00%	17.33%	22.12%
>200 meters	7.41%	0.00%	22.77%	30.18%

¹ Note: These are proposed MPA designations, NOT levels of protection assigned by the MLPA Master Plan Science Advisory Team. The southern portion of the proposed Morro Bay SMRMA was included with the SMRs for the analysis.

**Alternatives to the Department Preferred:
Package 1**

Overall Summary for Package 1 (2/9/06 version)

Type of MPA proposed ¹	# Proposed	Area (mi ²)	% of Study Region
State Marine Reserve (SMR)	21	59.56 mi ²	5.18%
State Marine Park (SMP)	1	4.41 mi ²	0.38%
State Marine Conservation Area (SMCA)	7	107.37 mi ²	9.34%
All MPAs combined	29	171.33 mi ²	14.90%

¹ Note: These are proposed MPA designations, NOT levels of protection assigned by the SAT. The proposed Morro Bay South SMRMA was included with the SMRs for the analysis.

Individual MPAs in Package 1 (2/9/06 version)

MPA Name ^A	Size (mi ²)	Along-shore span (mi) ^B	Depth range (ft)
Ano Nuevo SMR	0.53 mi ²	4.7 mi	0-7 ft
Greyhound Rock SMCA (**)	10.93 mi ²	2.9 mi	0-209 ft
Greyhound Rock SMR (2nd analysis as **)	3.64 mi ²	4.0 mi	0-138 ft
Elkhorn Slough SMR	1.59 mi ²	7.0 mi	0-10 ft
Moro Cojo Estuary SMR	0.74 mi ²	7.6 mi	0-10 ft
Monterey Submarine Canyon No Bottom Contact SMCA (***)	16.93 mi ²	6.5 mi	496-4838 ft
Ed Ricketts SMCA (*)	0.15 mi ²	0.7 mi	3-56 ft
Hopkins SMR	0.31 mi ²	1.0 mi	3-71 ft
Pacific Grove – Monterey SMCA (*)	3.67 mi ²	3.3 mi	0-237 ft
Carmel Pinnacles SMR	0.47 mi ²	0.9 mi	69-223 ft
Carmel Bay SMCA (*)	2.10 mi ²	3.1 mi	3-471 ft
Pt. Lobos SMCA (**)	11.81 mi ²	5.6 mi	228-1858 ft
Point Lobos SMR	3.67 mi ²	4.0 mi	0-404 ft
Point Sur Deep Reef SMCA (***)	10.25 mi ²	7.9 mi	162-359 ft
Julia Pfeiffer Burns SMR	6.14 mi ²	5.1 mi	3-498 ft
Julia Pfeiffer Burns Offshore SMCA (**)	6.18 mi ²	2.6 mi	206-1975 ft
Julia Pfeiffer Burns Offshore SMR	7.13 mi ²	2.6 mi	226-2227 ft
Big Creek SMR	2.26 mi ²	2.4 mi	0-264 ft
Alder Creek SMR	6.51 mi ²	5.4 mi	0-192 ft
Alder Creek SMCA (***)	13.23 mi ²	5.4 mi	131-1316 ft
Point Piedras Blancas SMR	0.72 mi ²	3.3 mi	0-55 ft
Cambria SMP (^)	4.41 mi ²	4.7 mi	0-102 ft
Morro Bay Harbor SMCA (*)	2.64 mi ²	7.0 mi	0-22 ft
Morro Bay South SMRMA (***)	0.66 mi ²	3.4 mi	0-10 ft
Point Buchon SMR	1.36 mi ²	1.6 mi	3-139 ft
Point Buchon SMCA (***)	9.72 mi ²	3.5 mi	141-377 ft
Diablo Canyon Security Zone SMCA (***)	3.16 mi ²	2.3 mi	0-174 ft
Vandenberg SMR	23.83 mi ²	13.3 mi	0-98 ft
Vandenberg Danger Zone 4 SMCA (**)	16.60 mi ²	8.6 mi	95-235 ft

A. Symbols following proposed MPA name indicate level of protection as determined by the MLPA Master Plan Science Advisory Team. (***) indicates SMCA High, (**) indicates SMCA Moderate, (*) indicates SMCA Low, and (^) indicates SMP Low. Level of protection was used in the SAT evaluation.

B. Alongshore span measured as direct line from one end of the MPA to the other.

Habitat Representation in Package 1 (2/9/06 version)

Habitat	Percentage of mapped habitat in proposed MPA designations in the study region ¹			
	SMR	SMP	SMCA	Total MPAs
Intertidal				
Sandy or gravel beaches	14.33%	1.57%	5.61%	21.51%
Rocky intertidal and cliff	22.27%	1.41%	5.87%	29.56%
Coastal marsh	54.28%	1.04%	12.84%	68.16%
Tidal flats	58.61%	0.64%	23.26%	82.51%
Seagrass beds (0-30m): Surfgrass	25.01%	2.16%	5.33%	32.50%
Seagrass beds (0-30m): Eelgrass	25.16%	0.00%	73.62%	98.78%
Estuary	31.43%	0.20%	26.86%	58.49%
Soft bottom				
0-30 meters	10.66%	1.15%	2.53%	14.34%
30-100 meters	2.36%	0.03%	8.35%	10.75%
100-200 meters	0.81%	0.00%	17.88%	18.69%
>200 meters	5.86%	0.00%	24.50%	30.36%
Hard bottom				
0-30 meters	11.79%	1.55%	7.20%	20.54%
30-100 meters	3.20%	0.00%	9.40%	12.61%
100-200m	0.27%	0.00%	11.82%	12.09%
>200 meters	0.99%	0.00%	32.06%	33.05%
Kelp forest				
Average kelp ('89, '99, '02, '03)	14.62%	4.13%	5.84%	24.59%
Persistent kelp	26.74%	6.29%	6.92%	39.96%
Submarine canyon				
0-30 meters	8.85%	0.00%	26.55%	35.40%
30-100 meters	3.39%	0.00%	0.90%	4.30%
100-200 meters	4.46%	0.00%	3.14%	7.59%
>200 meters	4.96%	0.00%	26.04%	31.00%

¹ Note: These are proposed MPA designations, NOT levels of protection assigned by the SAT. The proposed Morro Bay South SMRMA was included with the SMRs for the analysis.

**Alternatives to the Department Preferred:
Package 2R**

Overall Summary for Package 2R (3/15/06 version)

Type of MPA ¹	# proposed	Area (mi ²)	% of study region
State Marine Reserve (SMR)	21	147.68 mi ²	12.84%
State Marine Park (SMP)	1	9.84 mi ²	0.86%
State Marine Conservation Area (SMCA)	8	63.93 mi ²	5.56%
All MPAs combined	30	221.45 mi ²	19.26%

¹ Note: These are proposed MPA designations, NOT levels of protection assigned by the SAT. The proposed Morro Bay South SMRMA was included with the SMRs for the analysis.

Individual MPAs in Package 2R (3/15/06 version)

MPA Name ^A	Size (mi ²)	Along-shore span (mi) ^B	Depth range (ft)
Ano Nuevo SMR (2 nd analysis as **)	18.99 mi ²	11.5 mi	0-209 ft
Baldwin to Natural Bridges SMR	0.59 mi ²	4.1 mi	3-21 ft
Elkhorn Slough SMR	1.56 mi ²	7.0 mi	0-10 ft
Morro Cojo Estuary SMR	0.74 mi ²	7.6 mi	0-10 ft
Soquel Canyon SMCA (***)	23.41 mi ²	7.8 mi	247-2113 ft
Portuguese Ledge SMR	10.90 mi ²	5.4 mi	302-4838 ft
Edward C. Cooper SMR	0.11 mi ²	0.6 mi	4-54 ft
Ed Ricketts SMCA (*)	0.09 mi ²	0.4 mi	3-56 ft
Hopkins SMR	0.35 mi ²	1.0 mi	3-71 ft
Pacific Grove SMCA (*)	0.41 mi ²	1.2 mi	3-59 ft
Asilomar SMR	0.85 mi ²	1.5 mi	0-63 ft
Carmel Pinnacles SMR	1.25 mi ²	1.8 mi	3-223 ft
Carmel Bay SMCA (*)	1.71 mi ²	3.1 mi	3-471 ft
Point Lobos SMR	4.36 mi ²	4.8 mi	0-320 ft
Point Lobos SMCA (**)	11.28 mi ²	5.2 mi	227-2111 ft
Point Sur SMR	19.48 mi ²	5.4 mi	3-624 ft
Julia Pfeiffer Burns SMR	18.03 mi ²	4.8 mi	3-2227 ft
Big Creek SMR	3.24 mi ²	3.1 mi	0-314 ft
Big Creek SMCA (**)	12.97 mi ²	4.3 mi	3-2393 ft
Piedras Blancas SMR	22.09 mi ²	7.0 mi	0-337 ft
Cambria SMP (^)	9.84 mi ²	5.3 mi	0-150 ft
Ken Norris SMR (2 nd analysis as *)	5.50 mi ²	3.6 mi	0-187 ft
Estero Bluff SMR	0.14 mi ²	1.4 mi	0-10 ft
Morro Bay SMCA (*)	2.10 mi ²	7.0 mi	0-22 ft
Morro Bay East SMR	0.40 mi ²	2.4 mi	0-10 ft
Morro Bay SMRMA (***)	0.79 mi ²	3.4 mi	0-10 ft
Point Buchon SMR	8.38 mi ²	4.6 mi	0-217 ft
Point Buchon SMCA (***)	11.96 mi ²	4.6 mi	167-377 ft
Purisma Point SMR	19.27 mi ²	5.0 mi	0-190 ft
Point Arguello SMR	10.66 mi ²	8.2 mi	0-189 ft

A. Symbols following proposed MPA name indicate level of protection as determined by the Master Plan Science Advisory Team. (***) indicates SMCA High, (**) indicates SMCA Moderate, (*) indicates SMCA Low, and (^) indicates SMP Low. Level of protection was used in the SAT evaluation.

B. Alongshore span measured as direct line from one end of the MPA to the other.

Habitat Representation in Package 2R (3/15/06 version)

Habitat	Percentage of mapped habitat in proposed MPA designations in the study region ¹			
	SMR	SMP	SMCA	Total MPAs
Intertidal				
Sandy or gravel beaches	23.46%	2.34%	2.39%	28.19%
Rocky intertidal and cliff	33.94%	1.42%	2.68%	38.05%
Coastal marsh	57.16%	1.29%	4.05%	62.50%
Tidal flats	64.24%	0.64%	18.83%	83.70%
Seagrass beds (0-30m): Surfgrass	35.27%	2.52%	3.90%	41.68%
Seagrass beds (0-30m): Eelgrass	32.62%	0.00%	67.10%	99.71%
Estuary	36.72%	0.10%	21.36%	58.19%
Soft bottom				
0-30 meters	13.34%	1.79%	1.17%	16.30%
30-100 meters	10.96%	0.67%	4.38%	16.00%
100-200 meters	8.97%	0.00%	14.37%	23.34%
>200 meters	11.20%	0.00%	15.46%	26.66%
Hard bottom				
0-30 meters	28.02%	1.71%	1.54%	31.26%
30-100 meters	19.41%	0.02%	9.58%	29.01%
100-200m	11.48%	0.00%	26.37%	37.85%
>200 meters	9.47%	0.00%	12.87%	22.34%
Kelp forest				
Average Kelp ('89, '99, '02, '03)	30.60%	4.94%	4.83%	40.36%
Persistent Kelp	29.58%	9.75%	7.55%	46.88%
Submarine canyon				
0-30 meters	1.77%	0.00%	35.40%	37.17%
30-100 meters	4.07%	0.00%	8.82%	12.89%
100-200 meters	3.80%	0.00%	17.00%	20.79%
>200 meters	11.50%	0.00%	14.12%	25.62%

¹ Note: These are proposed MPA designations, NOT levels of protection assigned by the SAT. The proposed Morro Bay SMRMA was included with the SMR totals.

**Alternatives to the Department Preferred:
Package 3R**

Overall Summary for Package 3R (3/15/06 version)

Type of MPA ¹	# Proposed	Area (mi ²)	% of Study Region
State Marine Reserve (SMR)	18	110.00 mi ²	9.56%
State Marine Park (SMP)	3	7.54 mi ²	0.66%
State Marine Conservation Area (SMCA)	10	80.84 mi ²	7.03%
All MPAs combined	31	198.38 mi ²	17.25%

¹ Note: These are proposed MPA designations, NOT levels of protection assigned by the SAT. The proposed Morro Bay South SMRMA was included with SMRs for the analysis.

Individual MPAs in Package 3R (3/15/06 version)

MPA Name ^A	Size (mi ²)	Along-shore span (mi) ^B	Depth range (ft)
Ano Nuevo SMR (2 nd analysis as **)	18.25 mi ²	11.2 mi	0-209 ft
Natural Bridges Intertidal SMR	0.58 mi ²	4.1 mi	3-21 ft
Opal Cliffs SMP (^)	0.22 mi ²	1.7 mi	0-10 ft
Elkhorn SMR	1.81 mi ²	7.0 mi	0-10 ft
Moro Cojo SMR	0.46 mi ²	5.0 mi	0-10 ft
Soquel Canyon SMCA (***)	23.41 mi ²	7.2 mi	247-2113 ft
Portuguese Ledge SMCA (***)	10.90 mi ²	5.4 mi	302-4838 ft
Ed Ricketts SMR	0.11 mi ²	0.6 mi	4-54 ft
Ed Ricketts SMCA (*)	0.09 mi ²	0.4 mi	3-56 ft
Hopkins SMR	0.35 mi ²	1.0 mi	3-71 ft
Pacific Grove SMCA (*)	0.39 mi ²	1.2 mi	3-59 ft
Pacific Grove SMR	0.82 mi ²	1.6 mi	0-59 ft
Carmel Pinnacles SMR	1.25 mi ²	1.8 mi	3-223 ft
Carmel Bay SMCA (*)	2.10 mi ²	3.0 mi	3-471 ft
Point Lobos SMR	4.36 mi ²	4.6 mi	0-404 ft
Point Lobos SMCA (**)	9.19 mi ²	3.0 mi	228-1858 ft
Point Sur SMR	8.69 mi ²	5.2 mi	3-178 ft
Point Sur SMCA (***)	9.50 mi ²	5.2 mi	134-424 ft
Big Creek SMR	22.46 mi ²	6.1 mi	0-2393 ft
Piedras Blancas SMR	9.04 mi ²	6.8 mi	0-138 ft
Piedras Blancas SMCA (***)	12.02 mi ²	6.8 mi	89-319 ft
Cambria SMP (^)	7.06 mi ²	6.6 mi	0-102 ft
Cambria SMR (2 nd analysis as *)	2.54 mi ²	3.6 mi	0-106 ft
Estero Bluffs SMP (^)	0.26 mi ²	2.1 mi	0-10 ft
Morro Bay SMCA (*)	2.32 mi ²	7.6 mi	0-22 ft
Morro Bay South SMRMA (***)	0.65 mi ²	3.4 mi	0-10 ft
Morro Bay East SMR	0.33 mi ²	2.4 mi	0-10 ft
Point Buchon SMR	7.63 mi ²	5.8 mi	0-237 ft
Point Buchon SMCA (***)	10.92 mi ²	5.8 mi	173-377 ft
Purisima SMR	18.51 mi ²	4.8 mi	0-189 ft
Vandenberg SMR	12.16 mi ²	7.6 mi	0-120 ft

A. Symbols following proposed MPA name indicate level of protection as determined by the Master Plan Science Advisory Team. (***) indicates SMCA High, (**) indicates SMCA Moderate, (*) indicates SMCA Low, and (^) indicates SMP Low. Level of protection was used in the SAT evaluation.

B. Alongshore span measured as direct line from one end of the MPA to the other.

Habitat Representation in Package 3R (3/15/06 version)

Habitat	Percentage of mapped habitat in proposed MPA designations in the study region ¹			
	SMR	SMP	SMCA	Total MPAs
Intertidal				
Sandy or gravel beaches	22.02%	4.64%	2.48%	29.14%
Rocky intertidal and cliff	31.20%	3.89%	2.36%	37.45%
Coastal marsh	37.69%	0.00%	6.05%	43.74%
Tidal flats	48.48%	0.64%	20.02%	69.13%
Seagrass beds (0-30m): Surfgrass	31.42%	4.53%	3.11%	39.06%
Seagrass beds (0-30m): Eelgrass	25.16%	0.00%	74.55%	99.71%
Estuary	33.16%	0.20%	23.60%	56.97%
Soft bottom				
0-30 meters	12.17%	1.99%	1.32%	15.48%
30-100 meters	6.23%	0.07%	7.41%	13.71%
100-200 meters	1.92%	0.00%	19.49%	21.41%
>200 meters	12.16%	0.00%	7.05%	19.21%
Hard bottom				
0-30 meters	27.77%	2.39%	1.26%	31.43%
30-100 meters	11.71%	0.00%	16.45%	28.17%
100-200m	0.48%	0.00%	37.10%	37.58%
>200 meters	0.31%	0.00%	20.49%	20.80%
Kelp forest				
Average kelp ('89, '99, '02, '03)	28.54%	6.14%	4.04%	38.73%
Persistent kelp	24.86%	11.96%	6.29%	43.10%
Submarine canyon				
0-30 meters	8.85%	0.00%	26.55%	35.40%
30-100 meters	3.84%	0.00%	1.36%	5.20%
100-200 meters	2.81%	0.00%	12.38%	15.18%
>200 meters	10.12%	0.00%	9.61%	19.73%

¹ Note: These are proposed MPA designations, NOT levels of protection assigned by the SAT. The proposed Morro Bay South SMRMA was included with SMRs for the analysis.